## REMARKS

Responsive to the Office Action mailed 08 April 2008, and with an extension of time of ONE MONTH, the fee for which is paid herewith, the present paper is timely filed on or before 08 September, 2008. By the present paper, claims 3 and 9 - 14 are cancelled, claims 1, 2, 6, and 15 - 20 are amended, and new claim 21 is added. Accordingly, claims 1, 2, 4 - 8 and 15 - 21 are in the Application.

Entry of the amendments, entry of the new claim, and reconsideration of the Application are respectfully requested.

*The New Claims:*

New claim 21 depends from claim 1 and further limits the Markush group to cyclic onium compounds in which n = 2 to 5. Applicants respectfully submit that support for new claim 21 can be found, for example, at page 4, lines 9 - 11, and in Example 1.

Applicants respectfully submit that new claim 21 does not introduce new matter into the Application.

*The Claim Amendments:*

Claim 1 is amended to limit the onium compound to one in which $X^+$ is $S^+$, and n = 0. Because Applicants may always choose to claim less than they are otherwise entitled to, Applicants respectfully submit that support for the amendment is inherent in claim 1 itself.

Claims 6 and 15 - 20 are amended to correct dependency required by cancellation of claims 3 and 9 - 14.

Applicants respectfully submit that the claim amendments do not introduce new matter into the Application.

*Claim Rejections Under 35 U.S.C. § 112, paragraph second:*

Claims 9 - 14 were rejected under 35 U.S.C. § 112, ¶2, as allegedly indefinite. Cancellation of claims 9 - 14 renders the rejection moot.

*Claim Rejections Under 35 U.S.C. § 103:*

Claims 1 - 20 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over either or both of Shingo et al., JP 54106447 (Shingo et al.) and Pinto et al., U.S. Patent 6,455,573 (Pinto et al.), either alone or in view of either or both of Ducep et al., U.S. Patent 5,157,116 (Ducep et al.) and Naohito et al. (JP 2001 103928 (Naohito). Because neither Shingo et al. nor Pinto et al., alone or in any combination with either or both of Ducep et al. and Naohito et al, teach or suggest all of the elements (limitations) of Applicants' claims, Applicants respectfully traverse.

Applicants turn first to the rejection of claims 1 - 20 as allegedly obvious in view of Shingo et al.

Shingo et al. disclose neutral (i.e. non-ionic) N-substituted trihydroxy methylolpiperidines (azacyclohexanes). In characterizing the differences between Applicants' inventive onium compounds and the compounds taught by Shingo et al., the Office states: "The difference between the instant invention and that of the prior arts [*sic*] is the bonds between the active compounds and their anions. In the prior arts [*sic*] there is covalent bond between them while in the instant invention it is ionic interaction." Applicants respectfully submit that this characterization is an oxymoron. If a moiety is covalently bound, it is not an anion. A covalent compound does not have an anion. Clarification is requested.

In order that Applicants Reply be deemed completely responsive, and solely for this reason, Applicants assume that the above-quoted language in the

Office Action is intended to allege that a salt is obvious in view of its conjugate acid. Applicants acknowledge that, *in proper circumstances*, a salt of a Brønsted acid (acetic acid mesylic acid) *may* be obvious in view of the Brønsted acid itself.

But the "cations" of Applicants inventive "salts" are not the simple protons of a Brønsted acid. Rather, they are complex tri-substituted sulfonium ions, formed under particular conditions. Applicants respectfully submit that any presumption that *may* be appropriate in the case of salts of Brønsted acids is wholly inapplicable to Applicants complex cations, whose only similarity to the protons of a Brønsted acid is that they bear a positive charge. Indeed, it is awkward if not fully erroneous to consider Applicants' inventive onium salts as even having a conjugate acid. For at least this reason, Applicants respectfully submit that the rejection of claims 1, 2, and 4 -8 is improper and should be withdrawn. Cancellation of claim 3 renders the rejection of that claim moot.

Applicants do not rest their traversal of the rejection of claims 1, 2, and 4-8 as obvious over Shingo et al. on the foregoing distinctions alone. The compounds taught by Shingo et al. are piperidine derivatives. The compounds of Applicants' claims 1, 2, and 4-8 are derivatives of tetrahydrothiapyran. Applicants respectfully submit that there is noting in Shingo et al. or in the ken of the skilled artisan of the day that would have suggested to the skilled artisan that the nitrogen atom of the piperidine derivatives of Shingo et al. could or should be replaced with the sulfur atom of Applicants' inventive onium compounds. For this additional reason, Applicants respectfully submit that the rejection of claims 1, 2, and 4 - 8 should be withdrawn.

Cancellation of claims 9 - 14 renders the rejection of these claims moot.

Concerning claims 15 - 20, these claims depend from one or more of claims 1, 2, and 4 - 8. Because, as Applicants respectfully submit, claims 1, 2, and 4 - 8 contain patentable subject matter, claims 15 - 20 likewise contain

patentable subject matter. Accordingly, Applicants respectfully submit that the rejection of claims 15 - 20 is improper and should be withdrawn.

Applicants turn next to the rejection of claims 1 - 20 as allegedly obvious over Shingo et al. in view of either or both of Ducep et al. and Naohito et al.

Both Shingo et al. and Ducep et al. teach N-substituted piperazines, not S-substituted tetrahydrothiapyrans. Naohito does not alter this fact. Applicants respectfully submit that nothing in Shingo et al., Ducep et al., or Naohito et al. - or in the knowledge in the art of the day - would have suggested to the skilled artisan that the N-atom of the piperidine compounds of Shingo et al. and Ducep et al. could or should be replaced with the S-atom of Applicants' inventive tetrahydrothiapyran onium compounds. For at least this reason, Applicants respectfully submit that the rejection of claims 1, 2, and 4 - 8 is improper and should be withdrawn. Cancellation of claim 3 renders rejection of claim 3 moot.

Concerning claims 15 - 20, these claims depend from one or more of claims 1, 2, and 4 - 8. Because, as Applicants respectfully submit, claims 1, 2, and 4 - 8 contain patentable subject matter, claims 15 - 20 likewise contain patentable subject matter. Accordingly, Applicants respectfully submit that the rejection of claims 15 - 20 is improper and should be withdrawn.

Applicants now turn to the rejection of claims 1 - 20 as allegedly obvious over Pinto et al.

Pinto et al. disclose S-substituted tetrahydrothiapyrans and S-substituted tetrahydrothiaphenes in which the S-substituent invariably has a sulfate group □ to the S atom such that all ionic interactions or bonds are *intramolecular*. Any ionic interactions or bonds in Applicants' inventive onium compounds are *intermolecular*. The internal salts of Pinto et al. are potentially capable of

forming ionically bonded bicyclic structures, Applicants' inventive onium compounds are not.

Applicants respectfully submit that the skilled artisan of the day would have considered these foregoing differences between the compounds of Pinto et al. and the compounds of Applicants' claims as more than insubstantial and would not have been motivated to modify the internal or intramolecular salts of Pinto et al. to make fully-dissociable intermolecular salts. Such a change would require the removal of the □-sulfate group and replacement thereof with the □-hydroxyl group of Applicants' inventive onium compounds. The □-sulfate group is present in each and every embodiment of Pinto et al. and in particular in their "lead compounds" - salacinol and kotalanol. Applicants respectfully submit that it is far more likely than not that the skilled artisan of the day would have considered the □-sulfate group to be a significant feature of the compound and would have had no motivation whatsoever to remove it and replace it with the substantially different hydroxyl group. For at least these reasons, Applicants respectfully submit that the rejection of claims 1, 2, and 4-8 is improper and should be withdrawn. Cancellation of claim 3 renders rejection of hat claim moot.

Concerning claims 15 - 20, these claims depend from one or more of claims 1, 2, and 4 - 8. Because, as Applicants respectfully submit, claims 1, 2, and 4 - 8 contain patentable subject matter, claims 15 - 20 likewise contain patentable subject matter. Accordingly, Applicants respectfully submit that the rejection of claims 15 - 20 is improper and should be withdrawn.

Applicants finally turn to the rejection of claims 1 - 20 as allegedly obvious over Pinto et al. in view of either or both of Ducep et al. and Naohito et al.

The differences between the compounds of Pinto et al. and the compounds of Applicants' claims were discussed above.

The N-substituents of Ducep et al. are glycosyl or alkyleneglycosal groups. The S-substituents of Pinto et al. have a □-sulfate group that is present in *every* embodiment of Pinto et al. The skilled artisan would have to have had a reasonable expectation that a useful glycosidase inhibitor would result from swapping a glycosyl or alkyleneglycosyl substituent group from a piperidine compound for the □-sulfate substituent of a tetrahydrothiapyran compound, knowing full well that such □-sulfate substituent is present in *both* "lead compounds" of the reference. Furthermore, even *if* the skilled artisan *were* to have made such a substitution they would *then* have had to somehow conceive of transforming the glycosyl substituent to an open chain alkyl group having at least □- and □-hydroxylgroups, to obtain a compound that was in any way similar to that claimed by Applicants.

In view of the well-known unpredictability in the pharmaceutical arts, Applicants respectfully submit that, even when combined with Pinto et al., Ducep et al. does not even rise to the level of an invitation to experiment. Naohito adds absolutely nothing of value to the analysis. Accordingly, Applicants respectfully submit that the rejection of claims 1, 2, and 4 - 8 is improper and should be withdrawn. Cancellation of claim 3 renders rejection of that claim moot.

Concerning claims 15 - 20, these claims depend from one or more of claims 1, 2, and 4 - 8. Because, as Applicants respectfully submit, claims 1, 2, and 4 - 8 contain patentable subject matter, claims 15 - 20 likewise contain patentable subject matter. Accordingly, Applicants respectfully submit that the rejection of claims 15 - 20 is improper and should be withdrawn.

Conclusion:

In view of the foregoing amendments and remarks, Applicants respectfully submit that the claims are now in condition for allowance, which allowance is earnestly solicited.

If, in the opinion of the Examiner, a telephone conference would advance prosecution of the Application, the Examiner is invited to call the undersigned attorneys.

## REQUEST FOR EXTENSION OF TIME

Applicants respectfully request a one month extension of time for responding to the Office Action. The fee of $60.00 for the extension is provided for in the charge authorization presented in the PTO Form 2038, Credit Card Payment form, provided herewith.

## AUTHORIZATION TO DEBIT

If there is any discrepancy between the fee(s) due and the fee payment authorized in the Credit Card Payment Form PTO-2038 or the Form PTO-2038 is missing or fee payment via the Form PTO-2038 cannot be processed, the USPTO is hereby authorized to charge any fee(s) or fee(s) deficiency or credit any excess payment to Deposit Account No. 10-1250.

Respectfully submitted,

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